GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

ILLUSTRATED SEMI-MONTHLY

Published by THE A. I. ROOT CO. $1.00 PER YEAR MEDINA, OHIO

VOL. XXIX. SEPT. 1, 1901. No. 17

STRAY STRAWS FROM DR C. C. MILLER

I UNDERSTAND bee-keepers are to have a pow-wow at Buffalo, Sept 10. Who goes from Medina? [A. I. R. and E. R. R. expect to go.]

I DON'T USE the scraper of the Muench hive-tool, but take it off. I prefer a garden hoe as a scraper, for a wholesale job on top of frames, and for the smaller jobs the circular end of the Muench tool is ahead of a putty-knife. But scraping is not the chief use of a hive-tool. For starting frames, supers, and covers, the Muench is 'way, 'way ahead.

"WE WILL HAZARD the prediction that the highest standard of excellence is to be secured through careful selection, rather than through intensification by in-and-in breeding," says the editor of *American Bee-Keeper*. I'm too much of a coward to say I agree entirely with that, but I'll risk saying that in-and-in breeding is a pretty safe thing for us common bee-keepers to let entirely alone.

ROBBER-BEES that take stores by force, bee-keepers are familiar with. W. W. McNeal, in *American Bee-Keeper*, calls attention to another criminal class, thieves. They take stores by stealth, and there is no apparent remedy against them. The best-storing colonies are the most likely to be their victims, and Mr. McNeal thinks we should be on the lookout lest these thieves make us err in judgment when deciding upon the best storers to breed from. [There may be something in this; but how is any one to prove that a certain colony produces large averages by dishonesty rather than by hard honest toil?—ED.]

A. C. MILLER, in *American Bee-Keeper*, prefers the Alley plan for rearing queens, and says that by the cell-cup plan "in the hands of any person but those of an expert, there are many chances of producing inferior queens." I don't understand why. With the Alley plan a careless person may have queens reared from too old larvæ, a danger not met in the cell-cup plan. But the Alley plan is less troublesome, and takes less time. With proper care the best of queens can be reared by either plan. [Our Mr. Wardell, after having tried all plans, prefers a modified Alley plan; that is to say, he uses the Alley method; but instead of worker he uses drone cells, and, all things considered, he says he prefers them.—ED.]

IF IT IS TRUE that bisulphide of carbon will kill moth eggs as well as larvæ, why is it not a long way ahead of sulphur for those who fumigate their sections? Bisulphide can be used once for all when sections are taken off, or within two weeks, and save the repetition of the fumigation that sulphur requires, also saving the danger of making the sections green with sulphur. [If the reports are true, the man who persists in using sulphur in place of bisulphide of carbon is far behind the times. The bisulphide is more thorough, and much less trouble to use. While it is subject to more or less danger from explosion, the burning of sulphur, even in an iron kettle, also has its danger.—ED.]

YOU DO NOT remember, Mr. Editor, to have seen the terms *preconstructed* and *postconstructed* used by others. Turn to p. 54, *American Bee Journal*, 1861, and you will find them used by as good authority as Samuel Wagner, who says that's what the Germans call them. *Emergency* is a better term than *postconstructed*. But it seems very inappropriate to call a cell a *swarming* cell which is not intended for swarming. [Page 54 of the *American Bee Journal* for 1861 is away back of my time, for I was born in 1862. Say, look here, doctor, can't you trot out a reference that is not quite so ancient? Well, now, emergency cell is all right. We are agreed on that. If a swarming cell and a supersedure cell are alike, why not use one term to designate both?—ED.]

WHEN CELL-CUPS are used for queen-rearing, no matter how much royal food is given at the time, says W. W. McNeal in *American Bee-Keeper*, the bees always remove it, and in a few hours the larva is left dry. He thinks this is against rearing the best queens, so in about 24 hours he removes the larva and substitutes another, which will never be limited in its food. Would it not be cheaper to use

the Pridgen plan, taking the cocoon-cup with the larva? In that case I think there is never any stinting. [Some one else, some little time ago, I do not remember who, stated that all the royal jelly will be removed. Possibly there is something in this; but our Mr. Wardell says that, whether it is removed or not, it has a tendency, and a decided one too, to induce the bees to accept cells so supplied. The Pridgen method would probably be an improvement on this.—ED.]

IN GERMANY, besides the malignant foul brood, they say they have a mild kind. Gravenhorst's *Bienenzeitung* says the mild kind extends only to the death of the unsealed larvæ. These become a clear-gray purulent mass, finally drying into a crust. From the hive, proceeds a foul, sour smell, and brownish crumbs that the bees have dug out of the cells lie on the bottom-board, which, when rubbed in the fingers, give out the same smell. In this stage the disease is not yet contagious, and generally disappears by the efforts of the bees. It may be considered of the mild sort so long as the dead bees lie curled up on the bottom-board; but when they take a stretched-out, reversed position, then we have the malignant form. [From the description you give, I should be almost inclined to believe that what the Germans call a mild form of foul brood we call "pickled brood;" for, under some conditions, such brood has a sour smell, and hence the name.—ED.]

THE GREATEST PART of the cost of rearing a queen has been considered the time occupied in the nucleus to get her to laying; and, like others, I have made some effort toward seeing how few bees might be successfully used in a nucleus. But is not the cost of nuclei magnified? If I am not mistaken, a colony with a virgin queen will work just as vigorously as one with a laying queen, and a field bee will carry just as much nectar to a nucleus as to a full colony. If that is correct, and if a ripe cell is given at the time of removing a laying queen from a nucleus, then there will not be more than two days when the nucleus will not be in good storing condition, and when too much honey is in a nucleus a full frame can be exchanged for an empty one. Of course there will be some loss from the larger proportion of bees required to keep up the heat in a small nucleus. But I suspect that the gain from fewer bees in a nucleus is overrated.

YOU ASK, Mr. Editor, whether the fact that a preconstructed cell is never first occupied by a larva does not seem to argue that, if the bees were given their own way, they would prefer an egg? Hardly. The cell being prepared in advance, the egg is a sort of necessity. When given their choice on the removal of a queen, they prefer the larva to the egg. In rare cases I've seen them start with the egg, but I *think* there were no larvæ present. [There you go, using the word "preconstructed." Although I spent seven years of my school life on Latin, I had to go and look up our last issue to see whether it was swarming or supersedure cells. I now see that a preconstructed cell is a swarming cell. Of course, I understand that *pre* means *before*, and *post* means *after;* but before and after what? That is what I could not remember. Well, it would seem, then, from your experience, that a swarming cell usually has an egg, while an emergency cell has a larva. Is this correct? Now, look here; if you come at me again with "preconstructed" and "postconstructed" I will throw my old shoes at you.—ED.]

BEEN WATCHING bees working on corn. Pollen lemon-colored. They stand in the air poised on wing, making their legs work lively packing the pollen. Now and then the tongue is thrust out, appearing to be wiped by the front feet. What's that for, unless to provide honey to pack the pollen? All the packing, however, is not done on the wing. A good bit of it is done while hanging to the flower, some of the time by one foot. [You are right. I also have watched this act on the part of bees while they were gathering pollen. It is very interesting and at times ludicrous. The tongue certainly has an important part to play; but, as nearly as I can make out, the moist edges of the tongue rub among the pollen grains in the flower, and then the bee draws the tongue between its two front claws. This will leave a wad of pollen grains, mixed, probably, with a little honey. It is then transferred from the fore feet to the middle legs, and from these, by a wonderful piece of dexterity bordering on sleight of hand, to the hind legs on which are located the wax-pockets.—ED.]

I'M GLAD that sugar question is getting a stirring up. I've an uneasy feeling that Mr. Cowan may be right, that beet sugar is not so good as cane sugar. [Personally I do not have any uneasy feeling about the sugar question. It is not proper for us to boast; but for the last ten or twelve years we have used beet sugar for feeding our bees; and if any one can show a higher wintering average than we —one who has used cane sugar—we should like to have him hold up his hand. Our wintering losses very often do not exceed 2 per cent, and the very highest is 15 per cent, I believe. This covers a period of about 20 years. I suppose a fair average would be between 3 and 4 per cent. If Mr. Morrison, in our last issue, is correct, the beet sugar is better than cane. But my honest impression is that, with either sugar, we shall get good results. The trouble from sugar-fed colonies is more because the syrup is fed too late or too thick, and the bees do not have opportunity to ripen it. If it is fed during warm weather, when they can fly, half and half, *other things being what they ought to be*, I would not give two cents to have the colonies insured.—ED.]

EDITOR HILL raises uneasy feelings by suggesting that, when a colony is storing while others have to be fed, the storing colony may be quietly stealing from those that are fed—a fact which might be ascertained by comparing a sample of the surplus with the goods being fed. [While this may be true, yet when red clover was in bloom the only colony that stored any honey during this time was the colony of our old red-clover queen-breeder,

and one other one in the same apiary. These red-clover bees showed their largest gains when red clover was in bloom; and as long as any of it was out they would more than hold their own. If there was absolutely nothing else that they could gather from the fields, then they showed no unusual activity at the entrance. But in support of what Mr. Hill says, I would state that the bees of our *old original red-clover queen* of 20 years ago—the one that distinguished herself so greatly—were the worst robbers we ever had. They could not only beat any thing else in the yard during a genuine honey flow, but if any sweets were to be obtained by pilfering they were the chief leaders. I have seen a regular bee-line from a robbed colony to the hive of this red-clover queen. This is a point well worth raising; and in estimating the value of a queen we need to consider whether the bees are honest at all times or not.—ED.]

Welcome, first month with frost,
That breaks this torrid heat;
That brings again the needed rain
The harvest to complete.

Mr. Albert Gale, of Sydney, Australia, sends us the proof of an article written by him for the Australian *Agricultural Gazette*, wherein he contends that common corn does not yield honey, and that bees have nothing to do with it on account of its sweetness. As the concluding paragraph is a brief *resume* of the whole subject I give it. This is to be read in connection with what Dr. Miller says in Straws in this issue.

I have visited all parts of this State on matters connected with bee life. I have seen very many samples of so-called maize or corn honey, and these samples never agree the one with the other, either in aroma, flavor, or color. If those were *bona fide* samples of corn honey, there should have been uniformity in the points referred to, but such was not the case. Corn honey seems to be a thing of modern invention. I lived for years on the Lower Clarence, prior to the advent of sugar culture there, when it was perhaps second only to the Hawkesbury as a corn-producing district. I, with others, kept a number of bees, and in no case did the faintest suspicion enter my mind that I was harvesting corn honey, because I knew the grasses yield nothing of the kind. Neither did the bee-keepers around me hint at corn honey. There, in those days, I never heard the words used. We may as well expect to get honey from ferns or mosses as from the grasses, or expect a hen that is without ovaries to lay eggs as to expect honey from a plant that has no nectaries. Bees can not gather honey from maize, because the flowers have no glands wherewith to secrete it.

BEE-KEEPERS' REVIEW.

In the August issue Mr. Hutchinson gives three views which to me, at least, are very interesting, and I know they will be to all. The first is a view of his new residence where the *Review* is made, and two showing inside views of his office and type-room. It is probably the neatest and daintiest composing-room in the country. The pictures are accompanied by a brief sketch of Mr. Hutchinson's career as a bee-keeper from first to last. He has just been making a trip through Canada, and at the residence of Jacob Alpaugh he found a device for keeping out flies which I am sure will interest the women folks as well as the rest of us. He says:

At each upper corner of each window-screen the wire cloth was pried up ¼ of an inch by pushing in two little blocks of wood. Flies get into a house when the doors are opened. Sooner or later a fly goes to the window, runs up to the top, scurries along first to one corner or the other, and, if he finds an opening, out he pops, never to find his way in again by the same route. What would we think of a honey-house with crowds of bees hanging around the door that was opened dozens of times a day, and no opportunity for the bees to escape over the tops of the windows? We know that it would be full of bees all of the time. A dwelling with screens on the doors and windows is an exact parallel. Put escapes at the tops of the windows, and there is no necessity for sticky fly-paper.

ROCKY MOUNTAIN BEE-JOURNAL.

Under the title of "Honey without Bees," Mr. Morehouse has the following. He treats the matter without gloves, and in a manner that is refreshing. He says:

"HONEY WITHOUT BEES."

Such is the bombastic title of an advertisement of the Sanitas Nut Food Co., of Battle Creek, Michigan, that appeared in a recent number of the American *Mother*. Here is a sample of the wisdom of this bumptious ad. writer:

"Marvelous have been the discoveries in electricity and the uses of steam and the utilization of the various forces of nature; but a discovery which is really more far-reaching in its results, and perhaps capable of immediately benefiting a large number of persons, is a process worked out by an eminent physician by years of laboratory research whereby it is possible to make honey directly from wheat and other cereals, without the aid of chemicals of any sort, and by a process essentially identical with that by which honey is manufactured by plants ready to be collected and stored by the cunning little feet of the honey-bee."

Of course, such a pyrotechnic display of idiocy will only cause the bee-keeper to smile; but at the same time the assumption that genuine honey can be produced by artificial processes is capable of doing great harm by the suspicion it will create against the pure product. Won't some of our Michigan friends please hunt that fellow up and tell him that bees do not "collect and store honey with their feet"? We quote further:

"Malt honey, or meltose, is genuine honey—not an imitation or a substitute, but the real thing derived from the original source—the plant, but without the assistance of bees."

Bee-keepers will have no contention with these people if they will only be content to call their spurious concoction "meltose," and let it go at that. But to advertise it as "genuine honey—not an imitation or a substitute," is making for it a dishonest claim, and perpetrating a base fraud upon the public, that ought to render them liable to prosecution.

Be it remembered that no chemist's or physician's laboratory ever has, or ever will, produce a drop of "genuine honey."

It is to be hoped the Sanitas Food Co. will call that "bumptious ad. writer" to order.

J. W., Mo.—Your three acres of buckwheat will help to supply your six colonies with the necessary stores for fall and winter; but unless the flow is extra good it probably would not give enough honey, and sometimes buckwheat fails entirely.

GENERAL CORRESPONDENCE

RAMBLE 190.

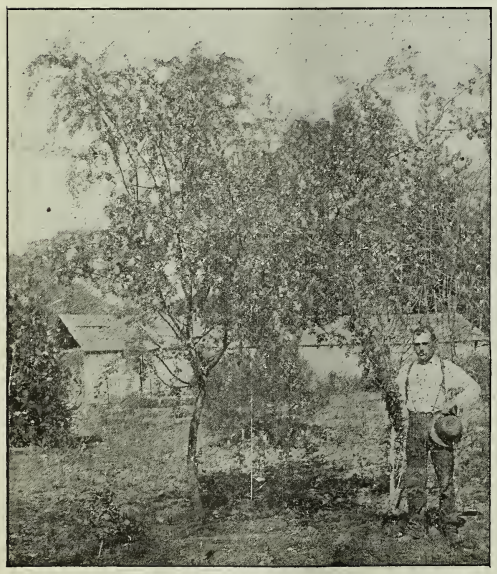
Shall a Government Forestry Commission be Organized?

BY RAMBLER.

People in Los Angeles go to Santa Monica, mostly for a plunge in the ocean. It is only a trifle over 20 miles. The crowds go on the steam and electric lines; but there are quite a few who run down on their wheels. A very good bicycle-path is provided all of the way. I took the path one day in the same direction, but I went a little further and ran up into the Santa Monica Canyon; and it is a very good place for a bee-keeper and a seeker for information to go, for here is located the government forestry station. Here all kinds of shrubs and trees, both native and foreign, are planted, and their uses minutely investigated. An interest is taken in bee culture as far as to observe which trees, etc., are useful as honey-producers. Over 60 varieties of eucalyptus-trees and many other trees and shrubs are here under experimentation.

The superintendent, Mr. C. A. Colman, called my attention to a shrub in full bloom, known as tegasaste, or tree lucerne. A full-grown tree, with the superintendent, also full grown, is herewith presented. This little tree is adapted to growth upon arid land. The foliage is eagerly sought by cattle; and when the tree is full grown it is not easily killed by close brousing. It is covered with a multitude of small white blossoms; and from the number of bees at work, and their enthusiasm,

VERONICA.



TREE LUCERNE.

there must be quite an amount of nectar secreted. The tree was in bloom at the time of my visit, early in April.

Where a shrub can be of use aside from its secretion of nectar it is well to give it a trial; and I have no doubt the State University at Berkeley, Cal., could put applicants in the way of procuring seed.

My attention was called to a beautiful shrub bearing the beautiful ladylike name of Veronica, or *V. salicifolia*, which should be of some value to bee-keepers. At present it is found mostly in parks, both public and private; and until some combination of use is discovered it will remain an ornamental shrub. I believe some portion of it is used to a limited degree as an ingredient to a proprietary medicine.

The development of the leaves and blossoms is very interesting to those who love to study plant-growth. The new growth that develops at the end of each twig looks like a matured pod, as will be noted in the full-sized photo of that part resting against the cup. But instead of being mature, this pod soon commences to split open, and it is transformed into two leaves; and, behold! as it opens, there peeping out are the twin baby-spikes of buds. They follow the example of the leaves, and soon part on either side of the stalk, and are

soon in full bloom, while other leaves and buds are forming above. Each spike is covered with little white flowers, and the blooming continues for several months. Bees are always busy upon the blossoms from early morning until evening, proving the shrub to be a prolific source for nectar.

It appears to the Rambler that great opportunities are being neglected in this country, and especially in Central California, where trees and shrubs can be profitably grown for uses aside from honey.

There are large areas of alkali land. This land can be purchased for about $2 50 per acre. The eucalyptus will grow upon it, and I am not sure but tree lucerne will also do well. The idea is to purchase a large acreage, one or more sections, and plant to eucalyptus. And here we come to another feature that has received but little attention: Eucalyptus is usually grown in California for shade or for wood. The bee-keeper planting for honey secretion could easily select those varieties not only for use as fuel but for timber, and in building there are varieties that take a high polish, and can be used for the manufacture of furniture. In fact, there are many uses if the proper variety is planted, and this planting for industrial purposes is in its veriest infancy.

The excuse that the profits are not immediate will not hold good with this tree. It is of rapid growth, as I have demonstrated recently, and can be cut for wood and profit as soon after planting as a revenue can be secured from the planting of the orange, peach, or other fruit-trees.

The planting of eucalyptus, tree lucerne, veronica, and kindred growth, upon the mountains and in the canyons of Southern California is of vital interest to bee-keepers and to all interested in irrigation. Conserve and extend the forests upon the uplands, and you add to the water supply for the valleys.

These are matters too large for individual effort; and I am looking for the time to arrive when the government will step in and do the planting. Many of these mountains are now set apart as government reservations, and they are in charge of rangers who spend their time, as the name signifies, ranging over miles of mountain and canyon. Set them to planting trees upon the waste places, and their value will be much enhanced.

Since writing the above there comes to hand, very opportunely, news of interest in this line. The Secretary of the Interior is taking steps to organize a government forestry bureau, and establish a system of reforestization of waste lands. It seems to me that bee-keepers should be wide awake enough to have a representative in this bureau. It is for tree-planting in the East as well as in the West.

We have a representative man in Washington, Mr. Frank Benton, and he is in position where he can exert a lasting benefit to bee-keepers. I am in hopes the editors of our bee-papers will think this of enough importance to cast their influence where it will do good.

Returning to the subject, Forestry Station, we find near it a neat apiary of about 100 colonies; and, though it belongs to private parties, I have termed it the Station apiary. By referring to the photo it will be noted that it is in a forest of sycamore-trees; and the su-

FORESTRY STATION APIARY.

perintendent of the station neglected no opportunity to make observations as to where and how much the bees worked upon the station flora. The owner of the apiary, Mr. Smith, an honest Dane, gave intelligent study in the same line.

The hives were arranged in a semi-circle, in a little clearing against the side of the canyon. The hives were supported upon stakes driven into the ground; and when ants were troublesome these supports were smeared with axle-grease, and no ants need apply. The hive has its complement of double covers, quilts, and stones, though the latter are of trifling size compared to some of the heavy weights in California.

It is a matter of fact that bee-keepers never consider how much time is taken to unload the top of a hive. Rags, called quilts; cover, shade-board, stones, and all but the cover, are useless—more of a job to take off and put on the stuff than to examine the interior of the hive. In spite of all this extra work, Mr. Smith and many other bee-keepers worry along and get there with good crops of honey. The honey resources here are excellent; and, with the proviso of a good year, the yields are large.

Mr. Smith preferred the L. frame. This preference was so strong that he changed over a lot of Heddon hives in an apiary he purchased; and by nailing two divisible chambers together, and cutting down a little, he could use his beloved frame. It was a very short-sighted piece of business, according to my notion.

Mr. Smith kept his bees near his residence; and his bees, his poultry, his vrow, and his baby were all under his eye. It is a cosy and romantic location for an apiary and a forestry station, and so near the ocean that it is sometimes easy to hear the waves dash against the rock-ribbed shore.

[In my hurried trip through California my attention was called repeatedly to the eucalyptus. It is indeed a beautiful tree, growing so rapidly as to be useful for shade in a few years. The leaves are sometimes a deep green, and then they are a light blue. I was told that the blue was due to the younger growth, and the green to the older growth of the tree.

Everywhere I heard eucalyptus or gum tree highly spoken of as a yielder of honey; and in saying *tree* I mean to include quite a variety, as there appear to be several different species.

I was also told that those $2.50 alkali lands would grow trees, and I do not know why Rambler's suggestion would not be practicable. Were it not that it takes a little time for it to materialize, tree-planting would be begun, and bee keepers would locate everywhere on those cheap lands. But even as it is, a splendid growth of trees can be secured in five or six years; and in ten years one would have quite a little forest.

I am glad to know that the government is looking into this matter of forest-trees. At the awful rate timber is being cut, it is highly important that a government forestry commission be organized, so that some steps may be taken to supply future generations with timber that will be sorely needed. Hive lumber, we know, for example, has been advancing very rapidly; and the fearful fact is becoming more and more apparent that in a few years soft lumber will be either very expensive, or, what may be worse, we may have none to use at *any* price.

GLEANINGS will be glad to assist in any way in its power, and we take pleasure in seconding Rambler's suggestion that Frank Benton, in Washington, do what he can to steer the proposed forestry commission in the right direction. Certainly we ought to encourage the growth of those trees that will afford a threefold use—timber, shade, and last, but not least, honey.—ED.]

THE PRODUCTION OF WAX.

Can it be Made Profitable in Cuba?

BY HARRY HOWE.

The price of honey here at present is about $2\frac{1}{2}$ cents per pound net, while the price of beeswax is about 27 cents. The prices are in American money. As a matter of fact we are paid in French and Spanish gold, but I have reduced all figures to U. S. gold. Now, dividing the price per pound of wax by the price per pound of honey gives a basis on which to figure. It is evident that we must get our pound of wax without expending a greater value in honey. This is very close to ten pounds of honey, which may be used to get the pound of wax. Authorities differ so much as to the amount required that no one of them can be regarded as reliable except under the exact conditions under which that particular test was made.

The only way I see of getting estimates for my location is to run one half of an entire apiary for wax and the other half for honey. This, I think, I can afford to do at present prices. Where honey can be sold for five cents, of course it would not pay, for it is pretty certain that it would take more than $5\frac{4}{10}$ pounds to the pound of wax.

Our conditions here are more favorable to wax production than any other place I know of. Our honey-flow is eight months long; and during about half of this the night temperature is high enough to insure wax secretion without excessive waste to keep up heat.

During the four months in which the flow is generally less than daily needs, although there is some honey nearly every day, the temperature is the highest of the year. During the heaviest of the honey-flow the night temperature is too low for profitable wax production.

So far I have written of things about which I know something. Now come the things of which I want to know—how best to turn the honey into wax.

It is pretty evident that it can best be done during the warmest weather. This will in-

volve storing the honey some months, and then feeding. My plan is to cut out the combs instead of extracting them, and return the frames, but only half from each hive, extracting the other half so they will at all times have store room. Then when there is no longer a surplus to be had in the fields, contract the brood nest and set out honey at one side of the apiary. As fast as they carry in the honey, melt the wax which remains; then when they have built their combs nearly down, set them out to be emptied and melted.

I think the improved condition of my bees in the beginning of the next harvest will about pay for the extra labor; but until it has been tried, no one knows how it will work.

The native system in box hives is to cut out all combs that have no worker brood, about four times a year, or as often as the bees fill the hive with combs. By this means they get about 1 lb. of wax to every 15 lbs. of honey. That is, every time they get 15 lbs. of honey they also get 1 lb. of wax.

In the old times here there were many apiaries run entirely for wax. They simply threw away the honey.

In conclusion, it is safe to say that it is only in some special location like Cuba that it could be made to pay to run for wax alone; but in many places the wax production can be profitably increased.

Artemisa, Cuba.

[I see no reason why wax production could not be carried on profitably in Cuba; and I believe you will find that, under some conditions, it will not take more than 3 lbs. of honey to make one of wax. Indeed, some experiments were conducted—just where and when and by whom I can not now recall—showing that, when conditions were right, even as low as 2¾ lbs., or about that, of honey, could be converted into a pound of wax. Perhaps I am wrong in my figures; and if so, some of our many readers who can recall the experiments may be able to give us the exact data. Referring to your proposed method, I believe it is along the right line, and we shall be glad to know just how it turns out financially.

Several correspondents in old Mexico have asked for particulars as to the best method for converting honey into wax; but so far we have been able to give no satisfactory information, for we have had absolutely no experience. If there are any of our subscribers in the West Indies, or any other hot country where honey is abundant and cheap, and wax high-priced, and who are in position to give us information, I should be glad to have them write and tell us all about it.—ED.]

CUBA FOR BEES AND HONEY.

Wrong Notions Corrected.

BY ROBT. L. LUACES

On page 136 I call the attention of brother bee-keepers in the United States to statements made by divers American bee-keepers in regard to conditions in Cuba, trying to show that Cuba is a much better country, both for bees and production of honey, than such statements seem to impart; and now Mr. H. G. Osburn, page 432, says I have taken some of the old experienced chaps by the neck for not printing a truthful picture of the real state of the bee industry in Cuba. Mr. O. seems not to have read well what I wrote, for in his article he goes on to prove my object; first, Cuba gives better results to the bee-keeper than what is said. The first part of Mr. O.'s article proves this, for he gives us a synopsis of the production of his apiary at Punta Brava, that can't be beaten. The second part claims that bee-keepers have been printing things about Cuba as a bee country when they know only a very small portion of the island. Mr. O. commits the same fault by his own showing, for he says that there are good locations in the middle, and along the south coast of the island, "where nobody but colored people can live. I expect to penetrate some of them next year." Now, I live in the *middle*, and am *white*, as are 70,000 of my neighbors. Mr. O. *expects to penetrate*, so he has not done so; and the south coast of Cuba is some 700 miles long; I hope I shall see Mr. O. when he does his penetration act. Mr. O. seems to indicate that a 68-hive man can't know as much about locations as a 105-hive man; ergo, my neighbor, with his 1000 hollow log hives knows more about bees than Langstroth did. If Mr. O. would come up country and look around he could say he knew what Cuba is good for.

Mr. W. W. Somerford, on page 553, gives us something very good on hive-covers and bottom-boards. So far I have nothing to complain of in regard to the Dovetailed covers. I have had them in use two years out in the open, and they are as good as new. The 16× 21-inch bricks are just the thing. I don't use them, but some much the same. I use pieces of hard-wood boards—mahogany, sabicu, jucaro, etc., with the same idea and results, after having found that my queen in two cases had moved to the space under the bottom-board, and the bees had filled it with comb. If Mr. S.'s friend of the railroad iron had used old street-car rails he would have come out all right, for they offer no place for the bees to harbor in, and fulfill all other conditions. The staple in the bottom corner of frames just hits where I wanted.

I should like to call the attention of Messrs. Somerford, Howe, Osburn, and others, to the following: Bees here (Puerto Principe) die off a good deal during campanilla bloom. I am the only man who keeps hives on the ground. All others follow the custom of the country, and mount them on stilts. So far I have had no losses. All the others have. Is it location, season, or situation? Italians and their crosses suffer less than blacks.

Puerto Principe, Cuba.

[It is very easy for one to judge of a whole large territory by one or two little spots in it, and it would not be strange if some of our correspondents had unwittingly fallen into this error. If so, I know they will be glad to be corrected.—ED.]

A DESULTORY TALK REGARDING THE SEASON OF 1901.

"Good morning, Mr. Doolittle. I was coming over to see my son Charlie this morning, so I thought I would run in a minute and see if I could coax you to sell me a colony of bees next spring. That is, I want you to agree to let me have one at that time if you will."

"I have not advertised bees for sale for two or three years now, thinking that I would not sell more, as I have got about the number I wish, all on good straight worker combs, and had concluded that I had better keep them than to sell more at the prices quoted by others, for the honey I sell from them each year comes to more than double what bees are quoted at. But why do you wish one of my colonies? You have a good start with the ten colonies you now have."

"You know that red clover has blossomed this year for the first time in from 15 to 20 years. That is, this year is the first time the bloom has perfected in that time, and I have watched, when working on my 200-acre farm, and I have not seen a single one of my black bees at work on the red clover, but the clover is just swarming all the time with your yellow bees, and they stick to the head one goes on for a minute or two, as if they were getting half a load from a single head."

"But don't you know that it is said that bees go but a mile or so for forage, and here you are claiming my bees as working on your clover, which is fully three miles from here?"

"I can not help what is claimed; there are no yellow bees nearer me than yours are; in fact, I know of none others nearer than eight miles. Did you not get honey from red clover before basswood opened, and then after it was past? If you did not, then I am deceived in what I saw."

"Yes, I knew the bees were at work on red clover; for with the 17th of June all desire to rob stopped, and by the 20th honey was coming in at a rate nearly equal to that from a basswood yield. From that on till basswood bloomed, I could leave a frame of honey standing out in the yard all day and not a bee look at it, except to gather propolis off the ends of the top-bar to the frame, where the bees often put in more than is agreeable. To know that this was right I went to the fields, red with clover, and, as you say, found them swarming with Italian bees, while scarcely a bee but those of the German variety was to be found on the little white clover that bloomed along the roadside."

"But you have not told me whether you got any honey or not in the section boxes."

"Yes. I took off from some hives as many as 80 one-pound sections of red-clover honey, while the average yield was not far from 65 sections. Then basswood gave a fairly good yield, but I can not say just how much, as many fields of the mammoth red clover were still in bloom, not having been cut when basswood was over, and the bees worked on those fields from a week to ten days after basswood, till the clover was cut for hay. This helped very much, as it gave the bees a chance to finish up those only partly filled from basswood. From two colonies I have taken 176 completed sections, with an average yield of about 145 sections from such colonies as were not drawn on for queen-rearing. This is the highest average yield I have ever made, except in 1877, when the yield was 166 pounds of comb honey."

"That shows you why I wish a colony of bees from you. From my ten colonies I shall not get 300 sections, and that will be nearly all from basswood, as the new swarms did not get to work till about the time basswood blossomed, and the old colonies swarmed so much that they have done nothing."

"Well, now you have touched something not in your first idea, that it was the red clover which made the difference. Had you not allowed those old colonies to swarm themselves to death, so to speak, and kept your original three colonies at the same number, or not allowed them to increase more than to six, at most, you would have been enabled to make a much better showing, I am sure, with your black bees. My increase at the out-apiary has been only one, and here at home the count is only two greater than in the spring. If you wish a good yield of honey from each colony you will keep the bees together as much as possible, for 60,000 bees in one hive will produce very much more section honey than will the same number of bees in three hives; or, worse still, the most of them divided up in after-swarms, and in the parent colony."

"Do you pretend to say that you had any colony which contained 60,000 bees during the late honey-flow?"

"Yes. Those which gave the 176 sections contained more, I calculate, instead of less."

"On what do you base your opinion?"

"Bees live to be about 45 days old during the working season, while the eggs laid by the queen perfect into bees in 21 days, so that we can figure two and one-seventh generations coming on to where one generation dies off. Many of my hives contained 800 square inches of solid brood which would perfect in time to take advantage of the red-clover honey harvest, although, owing to wet cold weather later on, this brood was not kept up to produce the basswood workers I desired; and this had something to do with the larger yield of honey from red clover. But as brood-rearing sprung up as by magic as soon as the cold and wet ceased, we can safely count on about 700 square inches of brood, as the average, to give bees which were available during the harvest. And as each square inch gives at least 50 bees, we have an average of 35,000 bees every 21 days, and two and one-seventh times that is 75,000."

"Whew! it does figure up, doesn't it?"

"Yes. And if we remember that many

bees are killed by accident, and otherwise, so that they do not live out their alloted time, as some claim, we can cut off 15,000 for this, and still have 60,000 left, as was proposed at the start. And could the weather have been favorable for brood-rearing 37 days before basswood bloomed, several thousand more bees could have been on the stage of action, and thus 1901 might have gone on record as the best year in the history of my bee-keeping life, instead of second best."

"But how do you keep so many bees together? Mine will not stay together after they get strong enough to swarm."

"Did you try to keep them together?"

"No, I did not know how. Tell me how."

"Well, I have several plans I am trying, but have only one which is as yet perfect enough to give out. Give lots of room, with as many bait sections as possible, so as to discourage early swarming as much as you can. When you think you can hold them from swarming no longer, cage the queen. Now wait from ten to eleven days, when you will shake the bees off their combs so you are sure to see every queen-cell started, and pull every cell off. Now make a hollow plug to fit one end of the cage the queen is in, and fill the hollow with candy, such as is used in shipping queens, having the plug about 1½ inches long, so the bees will be about two days in eating out the candy and liberating the queen. This does away with all desire for swarming from that colony."

"But don't the bees fill the cells where the brood emerges with honey?"

"Yes, quite largely; but as soon as the queen is out she soon asserts her rights, if she is a good one, and this honey is removed from the brood-combs and taken to the sections, and this, together with what is coming from the fields, and the new impetus given to the bees through having the queen laying again, makes a boom in the sections which is rarely attained under any other condition, so that they are filled as by magic, and completed in the finest shape to go on the market as 'gilt edged.' But I can not tarry longer this morning, as I have at least three days' work that ought to be done to day. Come again when I am not quite so busy."

PRICES ON HONEY; HOW THE BEES OF CALIFORNIA BREAK OVER ALL RULES; GRADING EXTRACTED HONEY.

"I arise to say" "Here too!" to several articles in a late issue of GLEANINGS. I quite agree with Mr. Wallenmeyer that, to overestimate the crop of honey, is a serious blunder. The leading commission house of San Francisco writes me: "The report has gone east that there is a big crop of honey coming from lower California. In consequence, they are not inclined to buy, only for present wants, while in the local market 3 to 4 cts. is all that is offered for extracted." Now the bee-keepers state that half of the bees starved to death last season, and, in consequence, are not on hand to gather the honey, and the weather has been too cold for the bees to work to the best advantage. In consequence, there will not be a large crop from the lower part of this State.

The statements of Western bee-keepers are frequently doubted because they differ from the experiences of Eastern bee-keepers. I am glad to note that Mr. E. R. Root finds that Western bees have ways of their own that are peculiar to themselves, and altogether unlike their Eastern sisters. I have always been told that "bees fill their combs with brood and stores; and when there is no longer any more spare room they swarm out and leave their stores and brood behind them." This season I bred my bees up strong, giving them two brood-chambers of 8 or 10 frames each, with supers in addition. The queen had all of the combs full of brood and bees, the supers well filled with honey, when the weather turned raw and cold. After about a week of this weather it changed to warm, and the bees swarmed all along the rows. An examination of the hives showed that the bees had consumed the stores, many of the combs being "as dry as a bone." The brood had nearly all hatched out of the combs, in the brood-nest, and the queen had not laid any eggs in the vacant cells. The hive was as bare—yes, more so—than at the close of a bad winter; yet with empty combs and vacant brood-cells they had swarmed as never before. I think I shall have to change the cause of swarming, *in this locality*, to "bees swarm when they want to, without regard to the condition of the combs; this season because they were populous."

The rules for grading comb honey are possibly as good as can be selected; but those governing extracted honey could not be worse. Every thing hinges on color. As well might we rate maple syrup, wine, or any other liquid by color alone, as honey. I should like to see the Morse butter-scoring system, with a few changes applied to extracted honey. This system gives, in 100 points, flavor, 45; body, 25; color, 15; salt, 10; package, 5. Now, why not give extracted honey—flavor, 50; body, 25; color, 25; package, 10? The present method is a reflection on the intelligence of the fraternity. E. H. SCHAEFFLE.

Murphys Cal., June 24.

[I have already published my estimate of the crop conditions in California, and that was to the effect that there was not nearly the honey actually secured that the early rains indicated there would be, and that I thought the prices would rule about the same as the year before. From recent advices from reliable sources I am pleased to know that there is a slight upward tendency in the market, as the coast buyers have come to learn they must pay more if they get any honey to sell. This is also true of Colorado and Arizona.

The grading-rules proposed by you are excellent. Now how shall we carry them into effect? The bee-journals could probably do more than any other agency, and GLEANINGS would be glad to co-operate with any of its cotemporaries.—ED.]

ABOUT HIVE-COVERS; THE USE OF SAW-CUTS ON THE UNDER SIDE.

About eight years ago I wrote you from Orlando, Fla., that I had discovered how to keep the flat hive-covers from warping. The letter was published in GLEANINGS; and when the patented Danz. hive was offered, I found one of its features was in line with my suggestion.

I called your attention to this fact, and received a very cordial letter from Mr. Danzenbaker, explaining that this particular was not included in his patent, for the obvious reason that it was not original, but had been for a long time in common use among woodworkers.

Each time I hear or read complaints of the flat cover warping, I wonder that people are so slow to profit by a good thing when told of it; and what can be simpler than to cut saw-grooves ½ inch or ⅝ deep in the under side of the cover, in line with the grain of the wood, and 1½ or 2 inches apart? Then nail on the cleats, and the board simply *can't* warp, whether in Cuba or Alaska. With such covers Rambler can lose his harrow-tooth, and Dr. Miller stuff his rags in his smoker. It is equivalent to a cover made of ⅞×1½-inch strips, and the cleats hold it securely flat under all conditions. Again, it is like a ¼-inch cover, with all the strength and weight and smoothness of a solid ⅞-inch board.

Here in Pennsylvania the solid board cover does not warp much, a ¼-inch crack being the maximum; but in Florida I used to pile 50 lbs. of brick on diagonally opposite corners to keep them anywhere near flat. One day when applying the method to the parts of a small box which I was gluing together, I fairly blundered on the idea that it would keep my cantankerous hive-covers flat. It did, does, and will.

Try a few, and see if it is not a very effectual and simple remedy for the only fault of the flat cleated cover. E. J. BAIRD.

Lock Haven, Pa.

[The fact is, we did give the idea of saw-kerfs on the under side of the cover-boards a most thorough test. While they might give good results in Florida, with its great amount of humidity, they will not do at all in a western or dry climate. In fact, they give a great deal of trouble right here in Northern Ohio. Boards having saw-cuts will check and split right along the line of the cut; and then we find they are bad to ship. Our conclusion was that it was far better to have solid boards. The best of hive lumber, under conditions that prevail in various parts of the United States, will check and crack soon enough without making matters worse by inviting such checks by cutting boards half way through. We have, therefore, abandoned the use of these saw-kerfs, not only on our own covers, but on the Danzenbaker; and I believe Mr. Danzenbaker himself is satisfied that that idea was not a success, for I have sent him some samples of covers that would almost invariably start to check at the saw-kerf; and we found that, as manufacturers, we could not afford to assume the loss in shipping on such covers.—ED.]

THE ROUGH HANDLING OF A VIRGIN QUEEN.

A young queen, after her wedding-flight, returned to the wrong hive, one in which there was a laying queen. About two hours after her return I discovered, by an unusual commotion among the bees of the hive from which she took her flight, and by examination, that she had failed to return. I had seen her take her flight, and at once suspected that she had made a mistake and had gone into an adjacent hive. On opening it I found the bees "balling" her at the bottom of the hive. I at once removed this "ball," succeeded in liberating the queen, and putting her into the proper hive. The bees which balled her had torn away from her the appendage usually appearing after the wedding flight, leaving the parts gaping open as if she were injured. I watched her closely to see whether she would take another flight. She did not go out any more, but in two or three days she began to lay, has proved herself to be quite prolific, and her bees are all right. May not her accident affect the length of her egg-laying life? H. W. WILLIAMS.

Elberton, Ga., July 12.

[The mere fact that the drone's appendages were pulled away by the bees would not, I think, necessarily imply that the queen would not lay so long on that account. Even if she had returned to the right hive in the first place, her own bees would have taken away the visible portions protruding from her body, and hence the result would have been just the same. In the arrangement of nuclei it is always desirable to have something by which young queens can discriminate between their own entrance and that of some other of the same general appearance.—ED.]

CELL-BUILDING ON DRY COMBS.

I removed the queen from one of my hives to cause them to rear queens, and I find they are building queen cells on cells where there are no larvæ I took a frame of Carniolan larvæ from a colony, and put it into a colony of hybrids after making it queenless. My object is to raise some Carniolan queens, with the result that they are not building on *any* larvæ. WM. J. MCCARTER.

Port Republic, N. J., Aug. 2.

[The circumstances you relate, of bees building cells on combs without any larvæ or eggs in them, is quite unusual; yet our Mr. Wardell says he has had two cases of it this season. But when they do build cells on such combs they will transfer the larvæ from the comb having them in the first place to the queen-cells that are empty.

But if your bees do not do this, there is nothing to prevent transferring bees or larvæ yourself, then taking away all brood of every sort, leaving nothing but the frame or frames with cells.—ED.]

GASOLINE IN LIEU OF BISULPHIDE OF CARBON FOR KILLING THE MOTH-WORMS IN COMBS.

I have just made an important discovery, to me at least; that is, that gasoline is as effective in killing moth-worms in bee-combs as bisulphide of carbon, and it does not cost a twelfth as much. My plan is to fill a tight box or barrel with combs, then pour in a pint or so of gasoline; close up tight for 24 or 36 hours, and the work is done. Gasoline beats sulphur far away, and is much easier used, and safer. I have used gasoline on hundreds of L. combs, and have no trouble with worms, as I think the gasoline kills the eggs as well as the worms. J. B. RAPP.

Owensville, O., Aug. 6.

[I know that gasoline can be used in place of the more expensive drug in destroying ant-nests; but it requires a larger quantity. If it will also kill moth-worms in combs it is a kink worth knowing.—ED.]

PECULIAR DISAPPEARANCE OF QUEEN.

I received the queen in good order. I had trouble during the latter part of June with my queens. Good strong colonies with plenty of brood would get queenless all of a sudden. I can't tell the cause, but I find I am not alone. It seems to be the case all over the State, and it is hard to get them to build cells, but they will accept other queens.

Newman, Cal., July 28. S. LONGMIRE.

[When I was through your vicinity I learned that queens were "turning up missing," in a way that could not be accounted for by the veterans in the business. If any one in the vicinity or elsewhere has a solution, let him be free to tell it. It may be that there is a disease that affects queens and not the rest of the bees; and it is a little strange that they should refuse to build cells.—ED.]

IDAHO AS A BEE LOCATION.

Mr. Root:—You are correct in regard to Idaho being one of the best locations for the bee industry in the United States. Our average winters here will compare favorably with those of eastern States far to the south of us. We have more days of sunshine than nine-tenths of the States have. Every few days in ordinary winters the bees can clean house and fly some. We leave them out on the summer stands unprotected all winter. Sometimes some protection would be better. Sweet clover grows wild after starting, wherever water can reach it. We have few wild flowers to make honey. Lucerne is the great crop and honey producer. We get three crops of this, yielding from four to seven tons, and selling at from $3.00 to $5.00. Clover yields two crops, and is usually cut, one for hay and one for seed. The seed yields from four to six bushels to the acre; weighs 60 lbs. or more, and is superior in quality to any raised elsewhere I ever saw. Our water gives us absolute control of its ripening. Neighbors of mine realized as much as $30 to $35 an acre on crops of this kind last year. Wheat produces up to 50 bushels, and oats to 75 per acre. Of course, this is the best farming. Vegetables do as well, and fruit and berries equal the best raised in the United States. We have proved this in open competition. Idaho apples sold higher on the New York market last year than any other—$1.00 a dozen. Living is nearly as cheap as in the central East. We have good society, and order; have a free-text-book system, and spend more on our schools per capita than half the States do. Our country schools have from six to nine months school annually. Teachers from Michigan and Vermont, with first-grade certificates, have trouble to secure second-grade here.

All together, any bee-keeper wanting a new location would do well to look up Southern Idaho. This is the second year for our association, and we have over 20 members. So far as I know, it is the first and only one in the State. Father gave me $20 for his first colony of bees. They can be bought now from $1.00 up. F. R. FOUCH,

Sec. Parma Bee-keepers' Asso'n.

Parma, Idaho, Aug. 13.

[Were it not that the writer of the above is secretary of a recognized bee-keepers' association, I should incline to the opinion that this was a free advertisement from some land speculator; but after having gone through Idaho, and studied its conditions, I am of the opinion that much of the above, if not all of it, is true. In Idaho, alfalfa, red clover, timothy—in fact, all the various kinds of hay and fodder plants—can be grown. Sometimes I could see an alfalfa-field, and next to it a fine growth of red clover. If I am not mistaken, every thing that can be grown in the East can be grown in Idaho, and a good many other things besides. There are quite a number of fine locations for bees, and not a bee in the regions. But no one should think of going to Idaho, or anywhere else, *without first making a personal visit himself;* and if he desires to keep bees in one of these new fields, he should by all means hire out for one season to some bee-keeper so that he can accustom himself to the conditions, and thus learn whether it will pay him to move his bees and family to the new climate.—ED.]

HONEY CAKES.

Mix thoroughly 1 quart of honey, ½ pound pulverized sugar, ½ pound fresh butter, juice of 2 oranges; then stir in gradually enough sifted flour to make a dough stiff enough to roll out easily. Turn out on a molding-board; beat well for a few minutes with a rolling-pin; then roll out into sheets half an inch thick; cut into round cakes, and bake in shallow buttered pans.—*Delineator.*

Murphys, Cal. E. H. SCHAEFFLE.

NATIONAL BEE-KEEPERS' ASSOCIATION.

OBJECT:—To promote and protect the interests of its members; to prevent the adulteration of honey.

OFFICERS:—E. R. Root, President, Medina, O.; R. C. Aikin Vice-president, Loveland, Col.; Dr. A. B. Mason, Secretary, 3512 Monroe St.. Sta. B, Toledo, O.; Eugene Secor, General Manager, Forest City, Iowa.

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FEES:—Annual membership fee, $1.00. Remittances may be sent here or to General Manager as above.

OWING to a little delay in getting the pictures ready illustrating the bee-keepers' paradise, I am not able to continue my travels in this issue, but will have them in our next.

PERHAPS some of our readers may wonder why the description of my western trip does not progress more rapidly. I have gathered so much material and made so many pictures that it will take considerable time to cover the whole series. While some features of the journey have been taken out of their natural order, yet the major part of them will necessarily have to follow in chronological succession.

THERE seem to have been heavy rains in the eastern and central States. This will help to preserve the life of the young clovers, and at the same time may give us fall crops. By the by, of late years we do not seem to hear much about fall flows of honey in the central and eastern States. What I mean by "fall flows" is honey from goldenrod and other plants that come into bloom in the autumn months.

GENERAL MANAGER SECOR was nominated for Representative in the General Assembly of Iowa at the Republican district convention, composed of Winnebago and Worth Counties, Aug. 13. The nomination was unanimous, and means election. Mr. Secor is a popular and able man, and well deserves the honor. If he had made any effort, from what I learn he might have received the nomination for Representative in Congress for his district.

OUR friends will not forget the big National Convention to be held at the Pan-American, Sept. 10, 11, 12, Tuesday, Wednesday, Thursday. The place of meeting is the Buffalo Library Building, corner Washington and Clinton Sts. There will be a joint session of the American Pomological Society and the National Bee-keepers' Association, on Thursday evening, the 12th. As has been already stated, there will be no fixed program outside of the joint session, and the general discussions of the bee convention will be those furnished by the question-box. In other words, there will be no long essays of any kind. It is expected that there will be nothing but lively, crisp, interesting, offhand talks—the kind that keeps everybody awake, and alert, and awaiting a chance to get in a word. We expect to have a stereopticon on the evening of the 11th, when an entirely new set of views will be given, taking up bee-keeping in the great West, showing how it differs from the bee-keeping of the East.

The A. I. Root Co. expects to be represented by the three Roots—A. I., E. R., and H. H.

ACCOMMODATIONS FOR BEE-KEEPERS WHO EXPECT TO ATTEND THE NATIONAL CONVENTION.

UNDER date of Aug. 26, Sec. A. B. Mason writes:

Dear Ernest:—I can furnish places for about 60 delegates to the N. B K. A., for 75 cts. for lodging and breakfast, in nice clean private families, if they will apply to me at the convention; and all others who may wish entertainment will be assigned to such places as they desire by the Dr. Pierce Free Bureau of Information at 652 Main St., if they call for Mr. Sidney S. Sleeper; and I am assured no one placed by the Bureau will be in any way dissatisfied, "provided they do not expect something entirely out of reason." The Bureau will furnish information free.

A. B. MASON,
Aug. 26. Station B, Toledo, O.

THE ANTI-SALOON LEAGUE AT THE BUFFALO EXPOSITION.

WE have just received the following from our good friend Bro. Brant:

Dear Bro. Root:—I hope that we may be able to help locate many of the delegates to the Buffalo convention Sept. 10-12. Can you not speak another good word for us in your excellent magazine? J. F. BRANT.
Buffalo, N. Y., Aug. 23.

Inclosed with the above letter were circulars from which I make the following extracts:

Dear Sir:—We will either give you accommodations at the "Central Park Place," or equally good in our best Christian homes, for $1 00 and upward, breakfast and late dinner extra. A tasty luncheon will be prepared for taking on the grounds if desired, and late supper will also be served at reasonable rates. The mayor has decided not to have runners at the depots allowed, so on your arrival take the Main Street car direct to 63 Huntington Ave., or to our office, D. S. Morgan Building, just off Main on Niagara Street. Persons willing to occupy neat and comfortable cots in our annex, can save from one-fourth to one-half. We are just 6 minutes' car-ride from the Exposition Grounds, and cars near at hand. Persons desiring to make definite arrangements for rooms in advance will please write promptly, enclosing postage for reply, to Rev. John F. Brant, Supt. Buffalo District, 309 D. S. Morgan Building, Buffalo, N. Y.

We sincerely hope all who love temperance and godliness will avail themselves of Bro. Brant's kind offer, and at the same time get accommodations among people who love righteousness and hate iniquity.

A CALIFORNIA BEE-JOURNAL.

THE new series of the *Pacific Bee Journal*, bearing the insignia of "Vol. IV., Aug. 1," is before me. The editor, B. S. K. Bennett, in heralding the reappearance of his journal, says: "We have awakened out of a sound sleep of three years to find the bees again humming, honey a flowing, and the bee-men much a going." Friend Bennett has put a good deal of life and energy into this number. He is a man who is thoroughly acquainted with all the special climatic conditions of the State of the setting sun—at least that was my

conclusion after having made a forty-mile ride with him over the mountains in the vicinity of Los Angeles. This trip, or, rather, the stops we made on it, will be illustrated in GLEANINGS, and then I shall have the pleasure of formally introducing our brother editor. In the mean time I am glad to extend to him on behalf of GLEANINGS the right hand of fellowship. There is a broad field for a bee-journal in California, and there is no reason why the old-new journal should not be a success.

CARELESSNESS IN THE HANDLING OF DISEASE-INFECTED TOOLS, ETC.

SOME have written us that, even after they had used the McEvoy treatment for handling foul brood, the disease broke out again. Many bee-keepers do not realize, in spite of all that has been said, the importance of having every thing that comes in contact with foul or black brood either burned up or shut up in a tight box or room where bees can not get at it. Metal tools such as screwdrivers, pries, etc., should be put on a bed of live coals for a few seconds—not long enough to draw the temper, but to destroy every thing in the way of microbes that may still be hanging about the articles. Smokers should be painted over with a strong solution of carbolic acid, and the fire-cup can be disinfected by making a good hot roaring fire in it. Division-boards and bee-feeders, and things like that, should either be immersed in boiling water and kept there for a time, or should be dipped in a strong solution of carbolic acid—one part of the acid to fifty of water. When I speak of the acid I refer to the crystals and not to the solution that is ordinarily obtained at the drugstores.

In burning old combs I would first make a good bonfire and get a lot of live coals; then lay the combs on top of the coals one by one. But do not put them on too fast; and as a further precaution (for the wax sometimes runs down into the ground without becoming sufficiently heated) I would bury the ashes and the ground under them. Put them so far below the surface that neither plow nor spade will ever dig them up.

FEEDING MEDICATED SYRUP; HOW TO PREPARE THE CHEMICAL.

IT will soon be time to feed bees in the central and northern States; and if feeding has to be resorted to I would strongly urge medicating all the syrup with the naphthol-beta solution. Such a precaution becomes exceedingly necessary just now when foul and black brood have been extending their ravages in every direction. The medicated syrup will not kill the spores of either disease, but it will destroy the bacilli as soon as the spores develop into the active stage. We gave full particulars on this subject on page 776, Oct. 1, 1900; but for fear some may have forgotten, I will repeat it.

Into an eight-ounce bottle (half pint) empty a one-ounce package of naphthol beta in the form of a fine white powder. Pour in just enough wood or common alcohol to dissolve the powder, and fill the bottle full. This quantity of chemical in solution is just right for 140 pounds of sugar dissolved in 140 pounds of water. To mix, put 140 pounds of water in a common honey-extractor; then add sugar gradually, dipperful by dipperful, until there are about 140 pounds of sugar. While the sugar is being added, keep turning the handle of the extractor so there will be a rapid agitation and thorough mixing. After the sugar is all in, keep on turning the handle until it is all dissolved, and, last of all, pour in the naphthol-beta solution already referred to. Stir this into the mixture thoroughly by running the extractor for several minutes longer.

In handling the naphthol-beta solution, be careful not to get it on the fingers; but after it is mixed with the syrup, it is perfectly harmless to man or bees. Naphthol beta can be obtained for 25 cts. an ounce; and at this low price no bee-keeper can afford not to take the precaution.

In making the syrup we recommend half sugar and half cold water. There is no need of heating, provided thorough stirring is used, either with a stick and tub, or, better still, in an extractor in the manner explained. We have fed a half-and-half mixture for several years; and since using it we have never had any trouble from its going back to sugar in the cells after the bees have put it into the comb. For very late feeding it may be advisable to use one part of water and two of sugar.

PRICE OF EXTRACTED HONEY DECLINING SLIGHTLY; MARKET FIRM ON COMB HONEY; HOW TO CIRCUMVENT THE SMALL PRODUCER WHO IS TRYING TO BREAK THE MARKET; IMPORTANCE OF BOTTLING EXTRACTED HONEY.

FROM the best information we can get hold of up to date it begins to appear that prices on extracted honey in the East will rule a trifle lower than last year at this time; but the market on comb will be fully as high. We base this estimate on the offerings that we have received, and from other information that we are able to gather at this point.

As we have before stated, too many bee-keepers are producing extracted. See GLEANINGS, May 1st, page 384, current volume. If more would turn to the production of comb honey, or, if some of those who produce and market the liquid article in bulk would sell it in the bottled form, the net cash received would be more.

We find that this year, the same as every year, the small producers are rushing their product to market at ruinous figures. The large producers should make it a point to hunt up these people, buy their honey at the low figures, and thus prevent it from going into the centers of distribution and breaking the market. A few hundred pounds at a low figure to some buyers may be the means of bringing down the prices on hundreds of thousands of pounds not yet offered.

Bee-keepers in California, Colorado, and Arizona, where large quantities of honey are produced, should not be in haste to take the first price offered. Already buyers are begin-

ning to see that they must advance on their prices or else they will not get much honey. Producers in these States should go around and visit *all* the small producers in their localities and get them to hold their honey at a certain figure. If they will not hold, buy the honey outright. You better have the low figure than the buyer who will use it as a club on you.

If more bee-keepers who produce the extracted article would turn their attention to bottling, it would have a tendency to stiffen the market for their kind of honey. A large number are doing so now; and it is an encouraging fact that consumers are beginning to learn that, when honey is bottled, bearing the name and address of the producer, it is pretty fair evidence that the goods are pure. There is not a particle of doubt that the careful, intelligent bee-keeper may get a better price for honey for bottling it, even including all expenses, providing, of course, that he puts up an article that will not candy for a year, is neat and attractive, and providing, too, that the honey is of first quality. All off and dark grades should be sold in bulk—never, never, put it in bottles.

Our bottling business is growing larger and larger; and from what we can see and learn, the field for such goods is very large, and every one can, in his own locality, build up a nice trade. Do not be discouraged by the sales of one year; and if the grocer tells you he can buy of a certain syrup and refining company at a good deal lower price per dozen, tell him that you do not sell that kind of goods. Ask him to sample your honey and that of the city chaps with the barrels of glucose in their warehouse.

THE OPINION OF SCIENTIFIC MEN ON THE PEAR-BLIGHT MATTER.

AFTER publishing the article on page 602 of GLEANINGS for July 15, regarding the question of pear-blight as it relates to the region round about Hanford, Cal., I sent marked copies to several scientific men; and among the number was one to Prof. Waite himself (one of the government officials who places part of the blame on the bee), stating that I believed the bee-keepers in that vicinity were preparing to move their bees out of that locality during the time the trees were in bloom. In reply I received the following, dated Aug. 14, which will explain itself:

U. S. DEPARTMENT OF AGRICULTURE,
Washington, D. C.

Mr. Root:—Your favor of August 7, with a copy of GLEANINGS, came duly to hand. I am interested in your views as expressed in the journal, and trust that the attention called to the subject of bees and the spread of pear blight may lead to valuable results. In case the bee-keepers of Hanford and vicinity remove their bees to a five-mile limit from the pear-orchards, and retain them thus during the entire period of bloom, this department will try to undertake a thorough and comparative study of the results. It is hoped that this laboratory will be able to prepare a careful record of the number of spring infections or blighted branches in several leading orchards about Hanford this season—platting the orchards and charging each tree with the number of cases of spring blight it sustained in the season of 1901. At the same time next year, provided the bees have been duly removed as here outlined, the same orchards will be again studied, and the number of spring infections which have been induced in the season of 1902 will be charged to each tree. A comparison of the records of 1901 and 1902 may then throw much light upon the influence of bees in spreading blight, and incidentally upon pollination, and, I hope, may lead to a broad and impartial adjustment of the interests now seeming to conflict. NEWTON B. PIERCE,
Pathologist in Charge.

Santa Ana, Cal., Aug. 14.

This letter fully justifies the good opinion that I expressed concerning Prof. Pierce; namely, that he is a fair man, and will endeavor to give the bees full justice.

In a recent article in the *American Agriculturist* Prof. Waite, another one who has incriminated the bees, has this to say:

I have thoroughly worked out the question relative to bees carrying blight. The conclusion reached is that bees carry pear-blight extensively, and, with other insects, are the principal or almost the only agency of distribution of the germs. . .

Bees were seen repeatedly visiting the infected flowers, and some were caught taking infected nectar, and by means of plate cultures the pear-blight germs were isolated from their mouth parts. By covering parts of the trees with sacks of various kinds of material, including mosquito-netting, and then artificially infecting certain flowers on the tree, the blight was observed to spread very freely over the uninfected and uncovered blossoms, but was entirely absent in the blossoms covered by mosquito-netting. . .

It may also be well to state that, as a result of this serious charge against bees, I was led to carry on an extensive series of experiments in the pollination of pomaceous fruits, and as a result of these I found that bees are indispensable to the pollination and setting of most of our pomaceous fruits, hence they should not be destroyed, as some California growers think. They simply carry the pear-blight incidentally while performing an important and necessary function.

From this it appears that Prof. Waite recognizes that "bees are indispensable to the pollination and setting of most of our pomaceous fruits." This opinion seems to be sustained by all of our agricultural colleges and all the best scientific authority throughout the United States; and it would appear that, even though the bees are declared guilty of spreading pear blight, yet the pear-grower can not and would not be able to dispense with their services.

In addition to the letter from Prof. Pierce, I have letters from Prof. Cook and Prof. Gillette, both of whom, as bee-keepers well know, have been warm friends of our friends the bees. Prof. Cook writes:

DEPARTMENT BIOLOGY, POMONA COLLEGE,
Claremont, California.

The "pear-blight" is a very serious question. I shall do all I can to determine the truth. I have little doubt that bees do aid in scattering the virus; but I am far from convinced that their removal will abate the trouble, or is wise and necessary. Yet I fully approve your action, and for reasons you give. We must be fair, and shall lose nothing in the end by such concessions as made. I shall do all I can to aid in the matter. Surely bees are not at the very worst, the exclusive wrong-doers. Again, other means than insects must aid in spreading the evil. A. J. COOK.

July 29.

The following is a letter from Prof. C. P. Gillette:

THE STATE AGRICULTURAL COLLEGE,
Dep't Zoology, Entomology, and Physiology,
Fort Collins, Colorado.

All science (properly so called) is a search after truth, and not a search after evidence to establish or defend a preconceived opinion. Whoever takes up the matter of bees and blight should see to it that so good a friend to man as the honey-bee is not condemned until *proven* guilty. If the blight bacillus develops freely in the nectar of flowers it seems certain that any insect that sips nectar from flower to flower will scatter the disease. It seems to me that the first inoc-

ulations in the flowers can not be laid to the bees. After germs have in some way entered flowers, and multiplied there, bees and other insects going from flower to flower would spread the disease, and the number of cultures in flowers would rapidly increase, so that late-blooming varieties should be diseased immeasurably worse than the early-blooming varieties. So far as I can now recall late and early blooming varieties, and their tendency to twig-blight, the late bloomers are not more diseased than the early-blooming varieties.

Much significant data might be collected in a single year, but I am inclined to think it will take a longer time to establish very clearly either the guilt or innocence of the honey-bee in spreading blight. I do not mean to question the results obtained by Prof. Waite, but wish to say that it seems to me it will be a considerable time before we can draw a very correct conclusion as to the extent to which the honey-bee is accountable for the spread of the disease known as blight. C. P. GILLETTE.

July 25.

I would state that I asked of the two last-named whether they would be in position to render us any assistance in the matter of confirming or disproving the statement that bees do carry the virus of pear-blight from tree to tree.

Respecting the attitude of the Central California Bee-keepers' Association, we have received a letter from Sec. F. E. Brown, who writes under date of Aug. 14:

We met as a body in session July 1, and passed resolutions advising the bee-keepers to move their bees out from the pear-orchards during pear-blooming season, as a matter of test only, at the same time asking the fruit-men to co-operate with us in helping to furnish us suitable places to locate the bees during that period; handed a copy of the resolutions to the committee of fruit-men that had the bees and pear-blight in charge. As to the result of this, I am unable at this writing to say, as I have not had the opportunity to find out since returning home. F. E. BROWN.

Hanford, Cal., Aug. 14.

From this it appears that the bee-keepers expect to carry out their part of the program in good faith; and from various newspaper clippings I judge that the pear-men are very much gratified at the attitude of the bee-keepers; and that, so far from being strife, there will be an honest effort on *both sides* to get at the truth, let it cut where it may. This is as it should be. There is no need of talking about poisoning bees or resorting to the courts. This whole question can, and should be, settled amicably between men of sense and fairness.

CONVENTION NOTICE.

All arrangements for the next convention of the National Bee-keepers' Association have been completed so far as possible, and the convention will be held in the audience room of the Buffalo Society of Natural Sciences, Sept. 10th, 11th and 12th; commencing on the evening of the 10th. The place of meeting is in the Buffalo Library building, corner of Washington and Clinton Streets, near the business center of the city. The president of the Natural Sciences Society, Mr. Smith, has also kindly offered our Association the use of their library and other committee rooms during the time of our convention, and to do all in the power of the society to help make our meeting a success.

Railroad rates will vary in the different passenger association territory, from one cent per mile each way to one and one-third fare for the round trip. Each person can readily learn the rate on inquiry at his railroad station

The Buffalo bee-keepers will try to provide entertainment at reasonable rates for all attending the convention, who will notify Mr. Sidney S. Sleeper, of Holland, N. Y., by Sept. 2d, of their wish for entertainment.

In a letter just received from Mr. Sleeper he says, "We want all to come who can, for we wish to make the Buffalo meeting the most pleasant and instructive one that was ever held in America. We will have the co-operation of all the sciences as well as the school board," and names some professional men who are interested in our specialty and will be at the convention to help.

In a long letter from Mr. Hershiser, just received, he closes by saying, "Call upon me for whatever further assistance I am able to render;" and Mr. Penton, an ex-president of the Erie County Bee-keepers' Society, and others, have offered to do all they can to provide for the comfort of the delegates.

As stated in my previous convention notice in GLEANINGS, there will be no fixed program and no papers, and the time will be occupied in answering and discussing questions, except that on Thursday evening there will be a joint session of our association with the American Pomological Society, to discuss "the mutual relations of bee-keeping and fruit-growing;" and Prof. Beach, of the N. Y. Agricultural Experiment Station, and Prof. Fletcher, of the Central Experimental Farm of the Dominion of Canada, will help talk for the bees at that session, and it is hoped that much good will result to fruit-growers and bee-keepers from this joint session.

If any bee-keeper who can not be at the convention has any questions, knotty or otherwise, he would like to have answered at the convention, will send them to me I will see that they are presented.

A. B. MASON, Sec., Sta. B, Toledo, O.

The servant of the Lord must not strive, but be gentle unto all men, apt to teach, patient; in meekness instructing those that oppose themselves.—II. TIMOTHY 2:24, 25.

The test of a soldier is to see how he behaves under fire. If, when the trial of his courage comes, his behavior does not correspond with what he has formerly taught, especially with what he has at times boasted of—in other words, if he does not practice what he preaches, his preaching comes to naught. And so it is with the Christian. If he can not stand the fire of sarcasm, ridicule, and unjust accusation, his previous talk amounts to nothing. I am many times pained and astonished to see how few there are who can follow the admonition of our text, especially when they are severely tried. Of course, Satan tries to trip us up; and a great many really good Christian people seem to think it incumbent on them to defend themselves, and even strike back, when they are persecuted. Of course, I allude chiefly to a war of words. Somebody is abusive, overbearing; may be he has been drinking; or if not, perhaps Satan has got into his heart. In such cases, how quick—yes, I think I may say all of us, even the best of us, forget the injunction, "Love ye your enemies, do good to those that hate you"!

Yes, this is the old, old story that I have talked about so much, some of you may say; but, notwithstanding, I do feel that it needs to be talked about, and, more than all, needs practicing. Once in a great while we find a man who will be meek and patient, and even pleasant, when he is roughly or rudely assailed. I have said several times that this matter of returning good for evil, and gentleness for rudeness, is an almost unexplored region, and

I think so even yet. A great many of us can not even bear to be told of our faults—faults that sadly need correcting; and, oh dear me! I am afraid I too am one of that kind. I have a few friends, and God knows I wish I had more, who are not afraid to tell me kindly and pleasantly of my faults and shortcomings. I have had some tests lately along that line. Some good friend who really shows his love and regard for me reminds me of duties I owe to society and to my fellow-men. I recognize it, and thank him, and start about a reformation; but after a while I get to defending myself, and before I know it I am feeling a little spiteful toward the one who cared enough for me to tell the plain frank truth.

I am going to give you a letter right here that I have just received. The writer did not intend it for print, but I am inclined to think he will not object, especially as he is a man who is not afraid to speak out his mind. I know from past experience that many of the readers of GLEANINGS will be inclined to bristle up and feel like talking back to him for me. Please do not do it, friends. This brother is a friend of mine, even if he has not said what he felt, in as kindly a spirit as he might have done.

The A. I. Root Co.

Your paper is not quite common and practical enough to suit me—travel notes and preaching. When I pay for a bee-paper I'd like all bee. I must preach to A. I. R. a little. He seems to be stuck on his nice confessions, as though that would atone for his lapses. His Sunday excursion was just inexcusable. I think it would be better if he were not so quick to see all the handsome women, and talk to all the pretty girls. His Florida meandering was just like him—no definite aim and no settled convictions. He will excuse us if we don't take his political preachings at all seriously. He was never cut out for a leader in thought or deed; he slops over too easily. For more possession and less profession (confession). From a reader of over a quarter of a century.

Dakota, Ill., Aug. 20, WM. S. FEHR.

Dear brother, I suppose you mean by your opening sentence that I am getting to be a little too worldly, and mixing in too much with the aristocracy to suit you. Very likely you are right, and I have been feeling something of this myself. Perhaps you do not know that I go to many fashionable and "high-toned" places, so called, not because my inclinations lie that way, but because I feel that, in my position, I ought to know a good deal about this world of ours, especially the great *busy* world. Just now I feel it a duty to visit the Pan-American at Buffalo; but, to tell the truth, I should very much prefer to go off in the woods on my ranch, and grow potatoes, and play with spring water. My trip up through the summer resorts of Northern Michigan was a good deal because I thought many people who have been, like myself, out of health, ought to know about these things and the facilities that are being offered to those who are seeking health by traveling. I realized, at the time I made that confession you allude to (about going on Sunday excursions), that I should be taken to task; but so far only one other reader of GLEANINGS has mentioned the matter.

Now, dear brother, if, when I started out on that excursion on Saturday morning, I had *planned* a Sunday trip without going to any place of religious worship at all, and had also figured out that I would make it all right by putting it in print in the way of a "*confession*," then I should justly deserve your criticism. Perhaps you may not believe me when I tell you that I had no thought, when I started out, of omitting attendance on Sunday services. It is true I might have guessed how it was likely to come out, but I didn't. If you think I am untruthful in this, then I would recommend that you do as you say you will, drop GLEANINGS entirely, and not waste any more time in reading my writings. I made a mistake, which I exceedingly regret; but after all I have said about remembering the Sabbath day to keep it holy, my conscience troubled me until I had confessed my mistake and owned up. How could I come before you and write these Home Papers, and leave you to suppose that I at all times and under all circumstances practiced a strict observance of the Sabbath? You say, when you pay for a bee-paper you would like it *all* bees. There are several good journals that are devoted entirely to bee culture, or almost entirely; but for almost 25 years, the time you have taken GLEANINGS, there has been a statement on the cover to the effect that our publication is "devoted to bees, honey, and home interests."

Very likely you are right in finding fault or complaining because of the way in which I spoke of the handsome women out Sunday afternoons on Mackinac Island. It is unusual for me to speak of such things as I did then, and my conscience troubled me about it afterward. While I like to see both men and women well and neatly dressed, I would not for the world do any thing or say any thing to encourage the extravagance in dress that is so common, especially in summer resorts.

When I finished my Florida trip I felt something as you do—that I had been traveling without any definite aim or settled convictions. One reason of this was poor health during almost the entire trip. I think, however, I had one pretty definite aim in starting out—that I might find the warm weather in Florida more favorable than the changeable weather here at home; but I did not find it so.

I most heartily agree with you, dear brother, that I was never "cut out for a leader in thought or deed." But the last of your sentence, about slopping over, is pretty tough. Mav be, however, I do sometimes; but if it is really true, you are the first person who has so far ever accused me of it, so far as I remember. I heartily agree with you, too, in wishing for *more* possession of the Holy Spirit to go with my profession. I notice you put in parenthesis the word "confession" with possession. Now, I am with you exactly in thinking that confessions are in the main bad things. A good many times in life, especially during my Christian life, when seeing the after-consequences of confession, I have questioned the wisdom of it. If there was no *transgression* there would certainly be no need of *confession;* and it behooves every one of us who are professing Christians, and everybody else, to live in such a way that there will be *nothing* to confess.

For almost 25 years, dear brother, I have been able to hold up my head and look everybody in the face, and say I had nothing to conceal in any part of my life—nothing that I would hesitate to have fully exposed or unfolded to the full light of day. The thing that troubled me, and which brought out the confession you object to, is that there was at least some sort of deliberate transgression. May God help me so to live that there may be no need of having at any time *any thing* to confess.

The last words of your letter are a little the hardest of all, "from one who has read GLEANINGS for 25 years," and *then* decided to drop it and turn his back on his old friend A. I. Root. Very likely this would have never occurred had I not listened to the voice of the tempter, and decided to do that which I *knew* had at least the "appearance of evil."

Perhaps the other readers of GLEANINGS may care to know that some others felt helped and *encouraged* in their spiritual life by my frank confession. Here is an extract from a letter that was put into my hand at just about the very time I read the severe censure from friend Fehr. Of course, this letter, too, was not intended for print, or I should not have thought of using it; but it illustrates how differently constituted we are, and how things strike one person in one way and another person in another way.

Mr. Root:—Under God I thank you — yes, I thank you Do you say to me, "What have you to thank me for?" Because I see your candor in publicly condemning wrong-doing as an example. That is enough to call forth the grateful thanks of any one desiring to do right. To one who is conscious of his own weakness in many ways, being so much greater than yours (for which you have so publicly and earnestly condemned yourself), it comes home, I tell you. Then in the second of your texts you quote from David, showing how he struggled, or, rather, how the good in him struggled to overcome the evil that was also there. The outcome of living the good, and overcoming the evil by the good, is joy, pleasure, gladness, happiness — a boldness, a courage, a nobleness, all to that degree that comes *not* without such living and such *overcoming*.

I have thought of you often this year. Had I known when you were at your "little ranch" I should have tried to get there, and I think I should. To-day I got the August 1st issue. It seems providential that I should have opened and read your article.

Traverse City, Mich., Aug. 5. Z. C. FAIRBANKS.

In the fore part of my talk I suggested there was one other letter referring to this matter of confession. I give it here:

Mr. A. I. Root:—

In GLEANINGS for Aug. 1st you take as a part of the subject of your discourse some verses from the 51st Psalm. It should be borne in mind that this Psalm is mostly a sobbing-out to God his penitence for the deadly sins of murder and adultery. By their commission he had placed himself with the outcasts, the pariahs of his people Did he go about proclaiming his sin and his penitence, and exhorting to righteousness? I think not. What influence for good could his exhortations have on those who knew of his transgressions? If I mistake not, the consequences of his sin followed him to the end of life, and he found the rest and peace for which he so earnestly prayed only beyond the grave. In a life of threescore and ten, in which I have not been unobservant, I have noticed that the converted murderers, adulterers, thieves, gamblers, drunkards, and whoremongers have not been kindly listened to by persons who have led clean and upright lives. It takes long, sometimes, to expel the devil from one of these; and until he is expelled, and the man knows it, he had better be modest before his fellow-men. I would not venture to write this, only that I am older than you, and that my experiences have not been dissimilar to your own.

Leon, Ia., Aug. 8. EDWIN BEVINS.

Dear friend B., permit me to thank you for the very kind and Christianlike way in which you make your suggestions. You are right, and I thank you for your thought in regard to that wonderful prayer that seems wrung from the very heart of one guilty of deadly sins and even crimes. I did and do recognize that the circumstances are far different; yet somehow, when I was thrown in daily and hourly contact with people who cared little or nothing for Christianity or Sabbath observance, it brought vividly to my mind David's touching and beseeching prayer—"Create in me a clean heart, O God, and renew a right spirit within me."* No, David did not go about proclaiming his sin; and I think you are a little hard on me, dear brother, if you think I was a little too ready to confess and (as you put it) "proclaim" my sins. I know from one standpoint it might look that way, and I hesitated about it for the very reason you mention; and yet my conscience was easier after I had decided to own up before the readers of GLEANINGS as I did.

There is still another point: One who criticises Sabbath-breaking and Sabbath-breakers should know exactly what he is talking about; and after my experience I felt less like censuring *severely* those who venture to go on a trip that takes in and includes the Sabbath day with other days. They were, on the whole, a nice, orderly set of people. I saw no drinking whatever, and there was little or no objectionable talk of any sort. I did not commit a crime; in fact, it was more because I did not "shun even the appearance of evil" than any thing else. Your point is a good one—that the consequences of sin usually follow us to the end of life, even if we do repent in sackcloth and ashes. I too have many times felt as if I did not care to hear some converted criminals speak from the pulpit. It is certainly praiseworthy to reform and repent; but it is better, far better, to lead clean and upright lives, as you express it, from youth to old age. May God help me to be modest and careful, even as the language of our text exhorts. Permit me to thank you again, friend B, for I feel sure I shall profit from your kind words and exhortations.

Here is another letter that comes to me like oil on the troubled waters, after having read the letter from friend Fehr:

Friend Root:—I wish I could tell you how much good your writings have done me. Your little book, "What to Do," aroused my enthusiasm some years ago, and now I am the proud possessor of the dear old homestead of 100 acres worth $8000. Had it not been for the writings of such men as Root, Henderson, Terry, and others, strangers would have stepped in and turned me out with a broken heart.

Pyrmont, O., Aug. 19. C. RHOADS.

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*Perhaps the beautiful lines of the old hymn by Cowper will express better what I felt after the experience of that Sabbath day than the words of David:

Return, O heavenly Dove, return,
Sweet messenger of rest;
I hate the sins that made thee mourn
And drove thee from my breast.

FLORIDA TRAVELS, CONTINUED.

On page 608, July 1, I spoke of visiting Mr. R. M. McColley, at Sorrento; but I omitted then to mention that I found there a successful house-apiary. This house-apiary is not made tight, as we make them here in the North, so as to exclude frost and cold. The upright boards are far enough apart so the bees can get through the cracks. We might call it a sort of corncrib house-apiary, inasmuch as it has openings all around, somewhat like a corncrib, but, of course, not with so many or so large openings. Well, this house-apiary is all right. The bees can be handled just as well as outdoors; in fact, Mr. McColley thinks he prefers handling them in the house. Quite a few who have house-apiaries say the bees sting worse in a house than around a hive located outdoors. Mr. M. thinks it is the other way. I suggested that, as the hives did not receive the benefit of the direct rays of the sun on cool mornings, the bees would not start out as early as the bees outside; but after watching carefully during a cool morning when it was almost frosty, I was obliged to admit that the bees began flying, and bringing in pollen, first from the hives in the house-apiary. I suppose this whole thing will be a matter of taste. Some who get acquainted with the house-apiary will like it; but as a rule most bee-keepers seem to prefer the hives located outdoors. In tropical climates, as in Florida and Cuba, for instance, no doubt some kind of shade, either of trees or movable boards, is quite an advantage.

Mr. McColley is quite deaf, and one must raise his voice pretty well to talk with him; but aside from this he is a most interesting talker, and has a great fund of useful information to impart to his visitors. Like others who are afflicted in like manner, he has spent quite a little money in remedies for deafness. Not long ago he answered an advertisement for artificial ear-drums. He told the proprietors that he had deposited $10 with his postmaster. If the ear-drums gave him any relief whatever the postmaster was to forward the $10; otherwise the drums would be returned. Of course, they would not "trade" on such terms; but they made such emphatic promises of sending the money right back if the apparatus did not do all they claimed, he finally sent the $10. The ear-drums gave him no help whatever; but the Wilson people had some very good excuse for not returning the money. A lady who is afflicted in a like manner, near him, was anxious to try them, but her experience was just the same.

One day while friend McColley was going along the street he saw a swarm of bees hanging on a limb in a neighbor's dooryard. This neighbor also was deaf, and he had faith in the much-advertised ear-drum. Friend M. laughingly told him he would give him $10 for the swarm on the limb, and "take his chances," provided the owner of the bees would take the $10 in ear-drums and take *his* chances. They made the swap, and my host showed me his "$10 swarm of bees." But the man who got the ear-drums, like the rest, could perceive no benefit from their use.

I can not remember exactly just now whether I have ever told our readers that I too have had a like experience. After having the grip one winter I found I could not hear as well as usual. I tried a pair of $10 artificial ear-drums. They were not only no help whatever, but my opinion is, it required several months for me to get fully recovered from the damage they did these delicate organs. I followed the directions very carefully, and succeeded in getting the things in my ears according to directions. From a careful examination of the way in which the things were made, my impression is that 10 cents in place of $10 would be a pretty fair price for them.

I had an exceedingly pleasant visit at Braidentown, Manatee Co. This locality is so far south that frost has never done any great damage to the orange-trees. Our readers of six years ago may remember my mention of our friend Bannehr, and that his family came from England and stayed in Florida two or three years, but became so homesick they pulled up stakes and went back to England; but after staying in the fatherland, I think it was less than a year, they became still *more* homesick, and pulled up stakes *again* and went back to Florida. They have a very beautiful place, with enough tropical plants growing right in the open ground to delight the heart of almost any florist here in the North. Friend Bannehr has sent me quite an assortment of rare and beautiful plants which are flourishing finely in our own greenhouse.

In the town of Manatee, right near his home, I noticed, six years ago, a beautiful spring, of such volume as to make a swamp or quagmire of perhaps ¼ acre in extent. This was an unsightly place almost in the heart of the town; and I suppose everybody thought the nasty boggy place was of no value at all to anybody, and never would be. The owner, however, has lately caught on to the new celery culture in Florida. He cut channels to let off the water of the spring, threw the ground up into beds, and planted celery. Just at the time of my visit he was harvesting a crop that I think promised to net him over $500 from that worthless ¼ acre. A neighbor over the fence had evidently caught on, for he too was growing some very fine celery. If there was any lack of rain, all they had to do was to dam up the outlet of the spring until the water came up to the roots of the celery to the desired height. The whole thing seemed very simple when you saw the men at work at it. But I am sure there are thousands of places, north, south, east, and west, where this same plan can be managed without any trouble at all. Of course, these people secured large prices by shipping celery to New York in the dead of winter.

By the way, let me mention right here something to the credit of our commission men.

Again and again I found cases where Florida growers were almost startled at the prices the New York commission men paid them for the stuff they shipped. Sometimes stuff that the grower himself did not consider any thing like first class was sold at a figure that was away above any thing they had thought of getting. This may, of course, be the result of the present general activity in all kinds of business.

Friend Bannehr's neighbor, Mr. Trueblood (rightly named I think), is also an enthusiastic bee-keeper. He is a lawyer by profession, but at the same time he is a most earnest and devoted Christian. He loved the honey-bees, and loved to care for them, and loved to grow crops better, perhaps, than he loves his profession; but I want to say to him, and perhaps to a thousand others who read GLEANINGS, that there was perhaps never, in the history of the world, a time when God-fearing lawyers were needed more than they are just now. Yes, we want lawyers, no end of them, who are not afraid to do right, especially when doing right *costs* something.

Mr. E. B. Rood, of Braidentown, is also one of the old-time bee-keepers; but in consequence of some bad luck in the honey business they are now keeping a very pleasant little restaurant in Braidentown.

SOME INTERVIEWS WITH SUCCESSFUL POTATO GROWERS JUST BEFORE OUR POTATO-BOOK WENT TO PRESS.

After the potato-book was all finished it occurred to me I had better visit a neighbor, Mr. George Ballasch, of Whittlesey, O., who makes a business of growing potatoes to the extent of forty or fifty acres every year; but before telling you what I saw and learned, permit me to explain that the month of July, 1901, has been the hottest of any July since the U. S. Weather Bureau has made any record —a period of about twenty years. The result of the severe drouth has been especially disastrous to potato-growers. Varieties that were disposed to blight were gone before the potatoes were half grown; and all varieties, in fact, were affected more or less, unless advantage was taken according to the best knowledge up to the present day to secure or insure, if you choose, a crop. Mr. B. makes potato-growing his entire business. He has a piece of low black ground especially adapted to this industry. It has been most thoroughly underdrained, so that it rarely suffers from excessive rains, such as we had during the month of June past.

Well, just when early potatoes were a failure everywhere, north, south, east, and west, Mr. B. has secured almost an average crop, and this, too, when the conditions are such that one of our Cleveland daily papers quotes for to-day, Aug. 26:

Potatoes.—Per barrel, fancy Eastern stock, $4.25@4.50; per bushel, $1.25@1 50; Louisville and Ohio stock, per barrel $3.75@4.00.*

Mr. Ballasch has dug and shipped three carloads already. The yield is from 175 to 200 bushels per acre, and the potatoes have sold from $1.25 to $1.50 per bushel, as nearly as I can make out. This remarkable yield during such a year has been made in spite of the fact that potatoes have been grown on this same land for ten years in succession. With his large acreage it is out the question to think of getting enough stable manure to go over it all. He uses chemical fertilizers to some extent. But his main reliance is on a crop of rye that is put in the ground just as soon as the potatoes are taken off. He believes emphatically in what Mr. T. B. Terry teaches, that the soil should always be green with some crop or other, every month in the year, winter and summer. The rye is sown at the rate of fully two bushels per acre. It is plowed under whenever he is ready to plant. One of the largest crops he ever grew, he said, was where the rye was fully six feet high, and was turned under just when it was coming into bloom. In fact, he had hard work to get it all under the fine black soil. The yield was very close to 400 bushels per acre.

Mr. Ballasch has, of course, experimented a good deal with varieties. I was pleased to know that his choice, not only of varieties but of methods, accords very closely with the teachings of the potato-book. At present he considers for a medium late variety the State of Maine as about the best potato he has on his farm, all things considered. I was pleasantly surprised to learn that the three carloads of potatoes he dug first and sent to market were the Early Thoroughbred that I helped to introduce five or six years ago. Friend Terry succeeded so well with this new variety, which was brought out by Wm. Henry Maule, that I bought several barrels, paying the extravagant price of $20 a barrel, and offered these as premiums to our subscribers. For the first year or two we did very well with them, and many of our subscribers succeeded equally well; but after a while, when they were obliged to take their chances with ordinary culture, together with other extra-early potatoes, they gradually went out of sight unless it is in a few localities; and during this past season we decided not to include them in our list of perhaps a dozen or more of the best up-to-date potatoes. But Mr. Ballasch rather prefers them to any thing else for extra early.

Now, this illustrates what I have already told you. A certain variety may be the very best for one particular locality, but not for other places. There was also a splendid showing for another variety just brought out, called

*To illustrate the present state of affairs, I copy the following from the Akron *Beacon* of Aug. 15, 1901:

If the price of potatoes continues to increase for another month as it has during the past few weeks the farmers will soon be riding in automobiles and wearing diamonds. Potatoes Thursday were selling at $2.00 a bushel.

Permit me to suggest that, before the farmers can have the automobiles and diamonds, they will have to have some potatoes to sell at the above prices.

King of the Earlies;* and our old friend the Early Rose, the one I found doing so well in the Traverse region, is also giving about as large a yield during this unfavorable season as any, although it is not as early as some others.

Mr. Ballasch has trouble with the scab as well as the rest of us; but he has very much less trouble where the seed is treated with corrosive sublimate. Ashes tend to produce scab in the soil, without doubt. We dug a number of tremendously luxuriant hills, where he had recently burned out some large stumps. There was a big yield of great handsome potatoes, but they were badly scabbed. He thinks it is not altogether the potash that produces scab; for a commercial fertilizer running high in potash does not act like ashes. The large percentage of lime contained in most wood ashes probably has as much or more to do with the production of scab than does potash.†

Carman No. 3 has been one of his best potatoes until this year; but during the past peculiar season, excessively wet in June and very hot in July, the State of Maine rather excelled the Carman.

The matter of variety is one of tremendous importance to one who grows forty or fifty acres of potatoes. He pointed out to me where hundreds of dollars would have been saved had he planted something else. On one occasion a neighbor offered him a lot of seed potatoes at 30 cts. a bushel. It was a variety, too, that has been praised largely through the press—yes, even by our experiment stations; but his loss was away up into the hundred because he chose this variety for seed where he might have taken some other.‡ He uses the Hoover digger. One reason he gave for preferring the Hoover was that it is manufactured in Ohio, close to his home. If he has a breakdown at a critical time he can get the missing part by express without delay. This is certainly something to be considered when one works on a large scale as does Mr. Ballasch. He uses the Aspinwall potato-planter. Of course, there is here and there a missing hill; but he thinks this does not occur often enough to offset the expense of an additional hand required with the Robbins planter.

The man has a beautiful home. He uses gas for lighting and fuel, that was found on his own premises. His potato cellar or cave, constructed especially for his crop, is to be lighted by gas, just the same as his house; then there will be no need of letting in air or light during unsuitable weather. This man makes the growing of potatoes his sole business in life. He reads up all the literature connected with his business. He tests different varieties, and he keeps in touch with the markets, and knows where to sell to get the best prices.

May I venture to speculate a little as to what his crop is going to be worth this year? Fifty acres at 200 bushels per acre would be 10,000 bushels; and at present prices the crop may bring him from $10,000 to $12,000 just because he is an expert in his line, and has succeeded in growing a crop when almost everybody else has failed. He told me that just now he was getting just about $150 per acre, over and above all expenses.

Perhaps I might mention right here that, where I turned under a heavy crop of wheat that was lodged badly, and planted potatoes, we have the best showing now of potatoes of any on our grounds. I asked Mr. Ballasch if he thought a heavy crop of wheat or rye could be worth anywhere near as much as a heavy growth of clover. He said he was sure it would not. Like myself he prefers the mammoth clover when he is growing clover to be turned under to bring up his land and for no other purpose.

I said to him, "Friend Ballasch, I know from my own experience during this past unfavorable season that you must have fought obstacles and enemies inch by inch, without any letting up." He replied:

"Mr. Root, at one time the bugs seemed just *determined* to destroy my crop; but I was equally determined to win in the fight. Why, we have actually used *200 lbs. of Paris green* this season, to say nothing about the labor required to make a good job of applying it so as to kill the bugs and not injure the vines." He used a sprayer worked by horse power.

Twenty-four hours later, in visiting a relative in the adjoining county of Summit, I mentioned Mr. Ballasch's success. My relative replied, "Now, look here. I have a potato story to tell too. Mr. ———, over here near the lake, started last spring to grow early potatoes. He paid over $100 for a lot of the best varieties of seed. He prepared his ground all right, and every thing seemed to be promising. But the bugs and wet weather and weeds came on all at once. He fought them for a while, but began to get discouraged, hesitated about using more money to employ hired help, and finally—what do you suppose? His whole plantation now is covered with weeds, and I do not suppose there will be a potato worth digging, even at the present high prices."

During the afternoon of the same day I visited my cousin, Wilbur Fenn. I found his farm in apple-pie order from one end to the

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* Since the above was written the King of the Earlies have been dug, and the yield was 218 bushels per acre of nice potatoes.

† An excess of acidity in the soil prevents scab; and any alkali, especially lime that neutralizes this acidity, encourages scab. Corrosive sublimate, and possibly leaving potatoes exposed to the light, kills the scab fungus. But to get rid of the scab fungus that is already in the soil, there is no remedy known, if I am correct, except plowed-under rye. This seems to sour or in some way produce the excess of acid we need in the soil. Just now I am unable to say whether plowing under a crop of wheat will produce the same result as rye or not. I can only say this: Where my wheat that was lodged badly was plowed under in June we have a nice crop of potatoes; and although I have dug into hills all over the patch I have not found any scab at all.

‡ Mr. Ballasch has an acre or more each of Maule's Commercial and Manum's Enormous. The Commercial is all right were it not for its exceedingly irregular and scraggly form. Our friend says he would not plant any more of them, even if they had every other good quality. We pulled up one tremendous stalk, or vine, and found just one scraggly mammoth potato, too large for table use. Manum's Enormous did better, but it was blighting badly when the State of Maine and Carman No. 3 seemed to be all right.

other. The outside fences around the road had been removed, and there were no unsightly bushes or weeds anywhere. In the back yard, and out around the barn, every thing is just as clean and slick as in the front yard. In fact, I do not know but the kitchen garden in a little handsomer than the front yard.

But the one grand sight of his whole place is a six-acre field of Russet potatoes. They were planted the 10th of July, right in the midst of our severe drouth; but they came up evenly, bright and clean; and Aug. 17th, just about five weeks from the day they were planted, they were knee-high, and covered the ground, if you looked across it at a little angle. The foliage was of that light green so characteristic of the Russet. Well, these had grown so fast that they were clean, and for some unknown reason there did not seem to be any perforations by the flea-beetle, or scarcely any evidence that bugs or insects of any kind had ever touched their beautiful tops. He said he had fought bugs, however, and had had a harder fight than ever before. He fought them with both Paris green and with the tin pan and paddle. The latter implements are quite an improvement over any thing I have ever seen used for the purpose. For the pan, imagine a large-sized dish-pan fastened securely to a pole long enough to come up under the left arm. On this pole is an adjustable handle like that on a scythe-snathe. This enables one to carry the pan down close to the ground without much fatigue, even when standing erect. One side of the pan is cut away just enough to let it slip under and almost clear around a hill of potatoes. The rough edge around the cut is smoothed by turning up the tin; and this lip that is turned up keeps the bugs back in the pan. The paddle is made of a small-sized shingle or an oblong piece of light pine board. This is tacked to an ordinary broom-handle. This broom-handle is laid across the board diagonally from one corner to the other. This brings the shingle square with the surface of the ground. With the left hand you place the pan right up around the hill. With the right hand strike the potato-tops with the paddle, and every beetle or slug will drop down into the pan. This makes almost a clean job, and the vines are not damaged by poison. Every little while the bugs are dumped from the pan into a tall crock of water with a little coal oil on the surface.

I must here state that the wonderfully even stand, with no missing hills, was the result of the management of Miss Ellen Fenn, now 15 or 16 years old. When she first commenced managing the planter for her father she was only 10 or 12. Mr. Fenn does not have to employ very much hired help just now, for he has a good-sized family of bright interesting children who are all interested in the potato crop of 16 or 17 acres. Very likely he will not get the prices that Mr. Ballasch does, but I think he will get a fair reward.

Special Notices by A. I. Root.

GROWING LETTUCE-PLANTS TO BE PUT UNDER GLASS LATER ON.

Now is the time, and during this month and next, to start your lettuce-plants for next winter's crop. Grow them outdoors just as long as you can, and they will stand quite a little frost. Good strong well-rooted plants ready to move into the house as soon as the weather is too cold for them outdoors is half the battle in making the crop. The art and skil l of man have never yet, in my opinion, invented any system of watering equal to a summer shower; and we sometimes have showers right along into November. Neither has any plan ever been discovered for keeping the plants healthy, and free from disease, like growing them in the open ground, and letting them get a few November showers. Even a soft snow will not hurt the plants a bit; but it is death to the green fly and all other enemies of healthy lettuce. I like to have them transplanted in beds where we can put on the sashes if the weather is severe, and pull them off at other times for the last transplanting, say toward Christmas, moving them into the greenhouse; and with good strong well-transplanted cold-frame plants to take into the greenhouse, you can get a crop ready to sell in three or four weeks. Now is the time to sow the seed, and we have an extra-fine lot true to name, grown specially for us. Ounce, 5 cts.; 1 lb., 50; 5 lbs., $2. By mail, 10c per lb. extra.

There is no other forcing lettuce, if I am correct, that will take the place of Grand Rapids, or come anywhere near it.

OUR NEW POTATO-BOOK.

I have been hard at work revising the old book (by T. B. Terry) for much of the last six months. The first edition was put out in 1893—eight years ago. In order to have the new book fully up to date I have gone over every point of value found in GLEANINGS during the past eight years. I have visited potato-growers, and studied up potato-growing from Florida to Northern Michigan—yes, and I might almost say from California to the Bermuda Islands. The book also contains quite a treatise on potato-growing for the London markets, on Jersey Island. Instead of about 250 pages, the size of the old edition, it now contains almost 300; and if it does not touch on every difficulty the skillful potato-grower meets, I have certainly tried hard to make it do so. The book certainly should be worth several dollars to every man who grows an acre of potatoes or more—that is, if he studies its teachings. As an illustration, last spring after I had planted two or three acres of potatoes I all at once decided to put in about a dozen acres more; and I actually started to the office to send a telegram for one of the latest styles of potato-planters. On the way I began figuring how much the planter would save me in time of team and men, if I planted a dozen acres each year. At first thought it looked as if I should pay for the machine in three or four years. Then I began to calculate that the potatoes would have to be cut just the same, even if we did have a machine. And then I wanted to know how much a *bushel* or how much an *acre* it cost to cut potatoes, say to two eyes. I got the potato-book, and I tell you I turned the pages over lively for about an hour. First I decided I would send my telegram for a digger; then in some other part of the book I found something that decided me the other way, and I changed my mind several times during the hour. This incident illustrates the importance of having a comprehensive index, and I have just got through making that index. It contains three pages, or about 300 topics, and I have "proved it" so as to be sure it "strikes the spot" every time. I believe the book will tell you almost every thing you wish to know about growing potatoes—not only how to become an expert, but it gives careful estimates of the cost of each operation all the way through. It tells you how successful men are fighting insect enemies, fungus, blight, etc. It is not *exactly* the book for one who wishes to "support his family on a quarter of an acre;" but I think it exactly meets the wants of thousands who love to till the soil, say from two or three acres up to thirty or forty.

There are 41 illustrations in the book. On account of its greatly increased size, the price will be 45 cents instead of 35, the old price. Postpaid by mail, 50 cts.; cloth-bound, 68 cts.; by mail, 75. Nearly 200 pages of the book are by T. B. Terry. The remaining 100 pages were by A. I. Root and Rev. C. D. Merrill, Beloit, Wis.